Research Associate – Development of an AI Data Engineer

THE ALAN TURING INSTITUTE

There has never been a more significant time to work in data science and AI. There is recognition of the importance of these technologies to our economic and social future: the so-called fourth industrial revolution. The Alan Turing Institute, as the UK's national institute for data science and artificial intelligence, plays an important part in driving forward advances in these technologies in order to change the world for the better.

The Institute is named in honour of Alan Turing, whose pioneering work in theoretical and applied mathematics, engineering and computing is considered to have laid the foundations for modern-day data science and artificial intelligence. The Institute's purpose is to make great leaps in data science and AI research to change the world for the better. Its goals are to advance world-class research and apply it to national and global challenges, build skills for the future by contributing to training people across sectors and career stages, and drive an informed public conversation by providing balanced and evidence-based views on data science and AI.

After launching in 2015 with government funding from EPSRC and five founding universities, the Institute has grown an extensive network of university partners from across the UK and launched a number of major partnerships with industry, public and third sector. Today it is home to more than 500 researchers, a rapidly growing team of in-house research software engineers, data scientists and a business team.

BACKGROUND

The Alan Turing Institute has worked with the Lloyd's Register Foundation (LRF), a global charity supporting research, innovation, and education in engineering for over six years. Through this partnership, we have helped establish Data-Centric Engineering (DCE) as a new field of research. This has achieved almost 400 publications, a new academic journal focused on DCE, and has supported over 90 projects including the development of a 3D printed digital twin on a bridge operating in Amsterdam and decarbonisation of shipping through Voyage Optimisation Software deployment. However, technology is moving at a faster pace than ever and the techniques that we utilise within Data-Centric Engineering must continue to evolve. The Splunk Centre for Fundamental Data-Centric Engineering will develop AI data engineers as a moonshot attempt to change the way Data-Centric Engineering is performed in practice and to provide a new range of tools to support the Data-Centric Engineering community.

ROLE PURPOSE

This role will develop AI that can automate the data pipeline. The idea is that developing data models for an individual product is increasingly possible for companies. However, scaling this up to work in a practical sense can be an issue, what if we want to develop individual models for 10,000 products or event 60,000,000 products? We will need an army of data engineers to build, quality assure and rebuild these models as the products evolve over their lifetime. It is not financially viable and there are not enough data engineers to perform this task. To automate the process we will focus on 4 main areas of research:

1. Pulling data from a range of sensors and generating well-structured databases.
2. Training Machine Learning tools and determining when retraining will be necessary.
3. Assuring the quality of these models.
4. Interpreting the results and communicating them to an expert without AI knowledge.

The aim is to work as a team to provide more than the sum of our parts, to learn new skills and to challenge ourselves to provide world-leading research. We are looking for a step change in performance through high-risk research. We will provide opportunities to embed elements of this research into real world engineering problems (focused on decarbonisation and safety), to make a difference in the real world and help you build your CV.

We are open to any skill set where the candidate believes they can contribute. We are looking for people who are interested in thinking creatively, to develop their own research ideas and to take onboard the ideas of others. Our priority is to attract technically strong researchers who are interested in asking bold new questions.

DUTIES AND AREAS OF RESPONSIBILITY

- Perform research into AI/ML/Data Science.
- Publish research in leading conferences/journals/magazines.
- Attend industry meetings to communicate research.
- Potentially go on secondment to learn new skills and embed research into industry.
- Engage the public and government on issues related to AI/ML/Data Science, in particular ethics and responsibility.

Please note that job descriptions cannot be exhaustive, and the postholder may be required to undertake other duties, which are broadly in line with the above key responsibilities. This job description is written at a specific time and is subject to changes as the demands of the Institute and the role develop.

PERSON SPECIFICATION		
Skills and Requirements Post holders will be expected to demonstrate the following:	**Essential (E)** **Desirable (D)**	**Tested at application (a)** **Tested at interview (i)**
Education/Qualification		
Research Associate level: PhD (or equivalent experience and/or qualifications), in a relevant technical or scientific discipline (as defined by applicant)	E	A
Research Assistant level: near completion of a PhD (or equivalent experience and/or qualifications), in a relevant technical or scientific discipline (as defined by applicant)	E	A
Knowledge and Experience		
Strong quantitative background, and preferably experience with Reinforcement Learning	E	AI
Interest and/or knowledge of AI, Machine Learning, Data Science, and/or Data Engineering techniques and principles	E	AI
Coherent, high-risk, research vision, especially related to developing an AI data engineer	D	AI
Communication		
Ability to communicate and network across disciplines	D	I
Experience communicating complex outputs clearly and coherently to a variety of audiences through different media both verbally and in writing .	D	AI
Planning and Organising		
Plan and undertake individual research	E	AI
Deliver results as part of a team	E	AI
Initiative and Problem Solving		
Ability to create and promote a collegiate and collaborative approach to research partnership activity	D	AI
Ability to identify opportunities for research collaborations beyond the applicant's own academic speciality.	D	AI
Able to resolve complex problems with the personal skills and initiative to achieve success	E	AI
Analysis and Research		
Ability to carry out original research and to produce published research papers evidenced by excellent publication record in relevant areas in leading international conferences or journals	D	A
Develop new hypothesis and concepts for testing to expand or extend existing body of knowledge	D	AI
Challenge the status quo and provide approaches to explore new possibilities or explanations	D	AI
Other Requirements		
Commitment to EDI principles and to the Organisation values	E	AI
Commitment to ethical and responsible AI development	D	AI

OUR VALUES

The Alan Turing Institute is committed to equality diversity and inclusion and to eliminating discrimination. All employees are expected to embrace, follow and promote our EDI Principles and Our Values.

APPLICATION PROCEDURE

If you are interested in this opportunity, please click the apply button below. You will need to register on the applicant portal and complete the application form including your CV and covering letter. If you have questions about the role or would like to apply using a different format, please contact us on 020 3862 3536 or email recruitment@turing.ac.uk.

CLOSING DATE FOR APPLICATIONS: 3 June 2024 at 23:59 (London, UK BST)

TERMS AND CONDITIONS

This full-time post is offered on a fixed term basis for 3 years. The annual salary is £44,180 plus excellent benefits, including flexible working and family friendly policies, https://www.turing.ac.uk/work-turing/why-work-turing/employee-benefits

Candidates who have not yet been officially awarded their PhD will be appointed as Research Assistant at a salary of £41,352 per annum.

EQUALITY, DIVERSITY AND INCLUSION

The Alan Turing Institute is committed to creating an environment where diversity is valued and everyone is treated fairly. In accordance with the Equality Act, we welcome applications from anyone who meets the specific criteria of the post regardless of age, disability, ethnicity, gender reassignment, marital or civil partnership status, pregnancy and maternity, religion or belief, sex and sexual orientation.

We are committed to making sure our recruitment process is accessible and inclusive. This includes making reasonable adjustments for candidates who have a disability or long-term condition. Please contact us at adjustments@turing.ac.uk to find out how we can assist you.

Please note all offers of employment are subject to obtaining and retaining the right to work in the UK and satisfactory pre-employment security screening which includes a DBS Check.

Full details on the pre-employment screening process can be requested from HR@turing.ac.uk***.***